BIOLOGY AND EDUCATIONAL STUDIES: *DEPARTMENT-SPECIFIC REQUIREMENTS CHART (UPDATED 3/28/23)*

	Course Special Major *Biology and Educational Studies*	**Special Major Biology and Educational Studies, *Secondary Biology Teacher Certification***	**Biology Major and Educational Studies Minor, *Secondary Biology Teacher Certification***	**Educational Studies Major *Secondary Biology Teacher Certification***
Biology Requirements *(BIOL)*	**Total: 6 credits**[1] _ BIOL 001 Cellular and Molecular Biology _ BIOL 002 Organismal and Population Biology _ BIOL -1-Cellular and Molecular Biology Elective* _ BIOL-2- Organismal Biology Elective — BIOL-3-Population Biology Elective _ Biology elective *CHEM 038 Biochemistry may be used for the Cellular and Molecular Biology elective through the Class of 2025.	**Total: 6 credits**[1] _ BIOL 001 Cellular and Molecular Biology _ BIOL 002 Organismal and Population Biology _ BIOL -1-Cellular and Molecular Biology Elective* _ BIOL-2- Organismal Biology Elective — BIOL-3-Population Biology Elective _ Biology elective *CHEM 038 Biochemistry may be used for the Cellular and Molecular Biology elective through the Class of 2025	**Total: 8 credits**[1] *** _ BIOL 001 Cellular and Molecular Biology _ BIOL 002 Organismal and Population Biology _ BIOL -1-Cellular and Molecular Biology Elective* _ BIOL-2- Organismal Biology Elective — BIOL-3-Population Biology Elective _ 1 Seminar course above BIOL 100 _ Biology elective _ BIOL 097: Themes in Biology *** Biology majors will require 9 credits beginning with the Class of 2026.	**Total: 6 credits**[1] _ BIOL 001 Cellular and Molecular Biology _ BIOL 002 Organismal and Population Biology _ BIOL -1-Cellular and Molecular Biology Elective* _ BIOL-2- Organismal Biology Elective — BIOL-3-Population Biology Elective _ Biology elective *CHEM 038 Biochemistry may be used for the Cellular and Molecular Biology elective through the Class of 2025
Thesis *(EDUC/BIOL)*	**Total: 1 credit**	**Total: 1 credit**	Thesis details provided by Major Department	**Total: 1 credit**
Additional Departmental Requirements	**Total: 4 credits**[2] _ CHEM 010 General Chemistry _ MATH 015 Calculus _ STAT 011 Statistics _ NSE Elective** ** Any one of the following courses may be used to fulfill the NSE elective requirement: ASTR 014 or above, CHEM 015 or above, CPSC 021 or above, PHYS 003 or above (except 029), ENGR 005 or above (except 007 or 010), above MATH 015 (except 020), above STAT 011, ECON 031 or 035	**Total: 4 credits**[2] _ CHEM 010 General Chemistry _ MATH 015 Calculus _ STAT 011 Statistics _ NSE Elective** ** Any one of the following courses may be used to fulfill the NSE elective requirement: ASTR 014 or above, CHEM 015 or above, CPSC 021 or above, PHYS 003 or above (except 029), ENGR 005 or above (except 007 or 010), above MATH 015 (except 020), above STAT 011, ECON 031 or 035	**Total: 5 credits**[2] _ CHEM 010 General Chemistry _ MATH 015 Calculus _ STAT 011 Statistics _ (2) NSE Electives** ** Any one of the following courses may be used to fulfill the NSE elective requirement: ASTR 014 or above, CHEM 015 or above, CPSC 021 or above, PHYS 003 or above (except 029), ENGR 005 or above (except 007 or 010), above MATH 015 (except 020), above STAT 011, ECON 031 or 035	**Total: 4 credits**[2] _ CHEM 010 General Chemistry _ MATH 015 Calculus _ STAT 011 Statistics _ NSE Elective** ** Any one of the following courses may be used to fulfill the NSE elective requirement: ASTR 014 or above, CHEM 015 or above, CPSC 021 or above, PHYS 003 or above (except 029), ENGR 005 or above (except 007 or 010), above MATH 015 (except 020), above STAT 011, ECON 031 or 035
Strongly Recommended	**N/A**	_ Work as Science Associate or lab assistant for 1 semester _ EDUC 075 Introduction to Science Pedagogy	_ Work as Science Associate or lab assistant for 1 semester _ EDUC 075 Introduction to Science Pedagogy	_ Work as Science Associate or lab assistant for 1 semester _ EDUC 075 Introduction to Science Pedagogy
Educational Studies Requirements	**Total: 5 credits in Educational Studies**	**Total: 9.5 credits in Educational Studies** Refer to description of general Educational Studies Secondary Certification Requirements.	**Total: 9.5 credits in Educational Studies** Refer to description of general Educational Studies Secondary Certification Requirements.	**Total: 9.5 credits in Educational Studies** Refer to description of general Educational Studies Secondary Certification Requirements.

Footnotes:

[1] Advanced Placement: A score of 5 on the Advanced Placement or equivalent counts in place of BIOL 001 and/or BIOL 002 as 1CR. This counts as 1CR of the total 6CR BIOL required for completion.

[2]Advanced Placement is sufficient to fulfill the CHEM 010 and/or MATH 015 and/or STAT 011 requirements.

Additional Notes:

1. This chart describes the specific subject area requirements for Biology special majors and/or certification.
2. Descriptions of specific required Educational Studies courses are listed elsewhere.
3. Occasionally departments have special offerings that may fulfill the required content.
   Please discuss such possibilities with your advisor or department chair.
4. The Department of Educational Studies works closely with each individual student to
   determine a semester- by-semester plan.
5. Please see the Chair of the Department of Educational Studies to design a plan that includes Honors.

Mission Statement

The Secondary Biology certification program engages students in the investigation of educational theory, policy, research and practice. Candidates for certification develop their pedagogical content knowledge in biology as well as their general knowledge of the subject. The program encourages undergraduates to think critically and creatively about the processes of teaching and adolescent learning and about the place of education in society. The program is committed to preparing students to employ evidence-based practice. Instructional practice, including the use of technology and assessments, are designed to enable preservice teachers to meet the needs of all students, including those with learning differences, and with consideration for racial, ethnic, linguistic and/or social economic diversity.